STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 127303

TO: Shailendra Kumar **Location: 5d61 / 5c18** **Wednesday, July 28, 2004** **Art Unit: 1621** **Phone: 272-0640** **Serial Number: 10 / 666543**	**From: Jan Delaval** **Location: Biotech-Chem Library** **Rem 1A51** **Phone: 272-2504** **jan.delaval@uspto.gov**

Search Notes

Jan please.

Access DB# 127303

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: S. Kumar Examiner #: 69544 Date: 7/15/04

Art Unit: 1621 Phone Number ~~30~~ 272-0660 Serial Number: 10/666,543

Mail Box and Bldg/Room Location: REM 5D61 Results Format Preferred (circle): PAPER DISK E-MAIL

5C18

If more than one search is submitted, please prioritize searches in order of need. MG

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for producing organic compounds in presence of oxyethylene ether

Inventors (please provide full names): Ajiruba Bhattacharya et al

Earliest Priority Filing Date: 9/19/2002

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

A method of producing an organic compound in a solvent minimized environment which comprises bringing at least one organic reactant into contact with at least one inorganic metal reagent and in the presence of catalytic amount of an oxyethylene ether for a time sufficient for the oxyethylene ether to partially complex the metal of at least one inorganic or organic metal reagent.

See claim 1-27, particularly claim 20

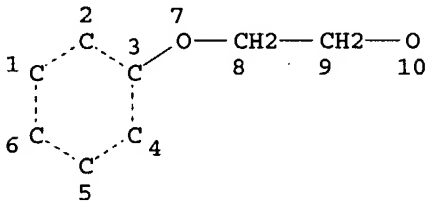
RECEIVED
JUL 15 2004
(STIC)

****

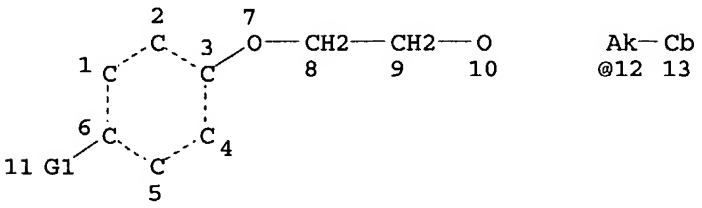
STAFF USE ONLY		Type of Search		Vendors and cost where applicable	
Searcher:		NA Sequence (#)		STN	✓
Searcher Phone #:	22504	AA Sequence (#)		Dialog	
Searcher Location:		Structure (#)	✓	Questel/Orbit	
Date Searcher Picked Up:	7/28	Bibliographic		Dr.Link	(STIC)
Date Completed:	7/28	Litigation		Lexis/Nexis	JUL 15 2004
Searcher Prep & Review Time:		Fulltext		Sequence Systems	
Clerical Prep Time:	30	Patent Family		WWW/Internet	RECEIVED
Online Time:	+110	Other		Other (specify)	

PTO-1590 (8-01)

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 09:17:07 ON 28 JUL 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   27 JUL 2004  HIGHEST RN 717822-84-9
DICTIONARY FILE UPDATES:  27 JUL 2004  HIGHEST RN 717822-84-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d sta que l102
L44             STR
```

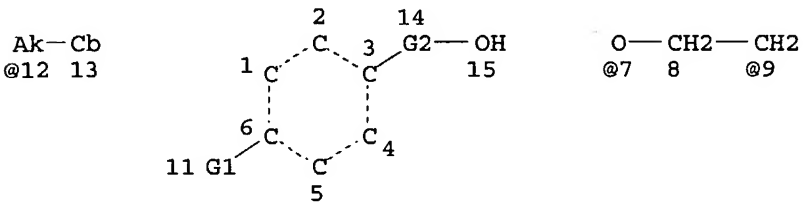



```
NODE ATTRIBUTES:
CONNECT IS M1  RC AT   6
CONNECT IS M1  RC AT  10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   1
NUMBER OF NODES IS  10

STEREO ATTRIBUTES: NONE
L46       50315 SEA FILE=REGISTRY CSS FUL L44
L47        8148 SEA FILE=REGISTRY ABB=ON  PLU=ON  L46 AND C2H4O
L49             STR
```

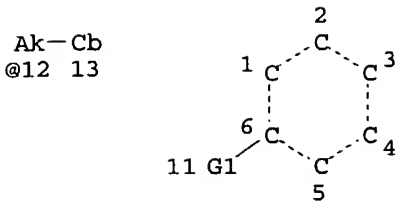



```
VAR G1=CB/AK/12
NODE ATTRIBUTES:
CONNECT IS M1  RC AT  10
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED
```

```
GRAPH ATTRIBUTES:
RSPEC   1
NUMBER OF NODES IS  13

STEREO ATTRIBUTES: NONE
L51         7872 SEA FILE=REGISTRY SUB=L46 CSS FUL L49
L52         1259 SEA FILE=REGISTRY ABB=ON  PLU=ON  L47 AND L51
L55              STR
```




```
VAR G1=CB/AK/12
REP G2=(1-20) 7-3 9-15
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC   1
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
L57          562 SEA FILE=REGISTRY SUB=L51 CSS FUL L55
L58          295 SEA FILE=REGISTRY ABB=ON  PLU=ON  L57 AND 1/NC
L59           55 SEA FILE=REGISTRY ABB=ON  PLU=ON  L58 AND IDS/CI
L60          240 SEA FILE=REGISTRY ABB=ON  PLU=ON  L58 NOT L59
L61           67 SEA FILE=REGISTRY ABB=ON  PLU=ON  L60 AND PMS/CI
L62           65 SEA FILE=REGISTRY ABB=ON  PLU=ON  L61 NOT (CYCLOHEXYL OR
                 C6-C6/ES)
L63          173 SEA FILE=REGISTRY ABB=ON  PLU=ON  L60 NOT L61
L64           40 SEA FILE=REGISTRY ABB=ON  PLU=ON  L63 AND O>=10
L65          133 SEA FILE=REGISTRY ABB=ON  PLU=ON  L63 NOT L64
L66           56 SEA FILE=REGISTRY ABB=ON  PLU=ON  L65 AND O>=5
L67           54 SEA FILE=REGISTRY ABB=ON  PLU=ON  L66 NOT (CYCLOHEXYL OR
                 D/ELS)
L68          267 SEA FILE=REGISTRY ABB=ON  PLU=ON  L57 NOT (L58 OR L59 OR L60
                 OR L61 OR L62 OR L63 OR L64 OR L65 OR L66 OR L67)
L69          124 SEA FILE=REGISTRY ABB=ON  PLU=ON  L68 NOT (N OR P OR SI OR
                 S)/ELS
L70          106 SEA FILE=REGISTRY ABB=ON  PLU=ON  L69 NOT CYCLODEXTRIN
L71           92 SEA FILE=REGISTRY ABB=ON  PLU=ON  L70 NOT UNSPECIFIED
L72            6 SEA FILE=REGISTRY ABB=ON  PLU=ON  L71 AND (NA OR K)/ELS AND
                 2/NC
L73            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L72 NOT (IDS/CI OR C11H16O2
                 OR C9H12O2 OR C10H14O2)
L74          310 SEA FILE=REGISTRY ABB=ON  PLU=ON  L52 AND L57
L75           86 SEA FILE=REGISTRY ABB=ON  PLU=ON  L74 AND 1/NC
L76           61 SEA FILE=REGISTRY ABB=ON  PLU=ON  L75 NOT IDS/CI
L77           57 SEA FILE=REGISTRY ABB=ON  PLU=ON  L76 NOT (D/ELS OR CYCLOHEXYL
                 OR C6-C6/ES)
L79       40517 SEA FILE=REGISTRY ABB=ON  PLU=ON  C2H4O AND 46.150.18/RID AND
                 PMS/CI
L80              STR
```

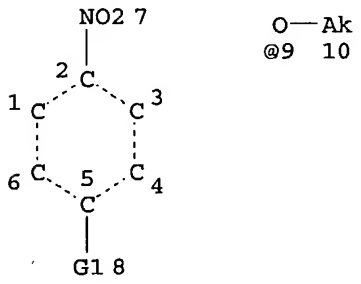


VAR G1=CB/AK/12
NODE ATTRIBUTES:
CONNECT IS M1 RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 1
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L82 SCR 1992 OR 2016 OR 2021 OR 2026 OR 1918 OR 2039 OR 2050 O
R 2049 OR 2048 OR 2053 OR 2052 OR 2051 OR 2054
L84 2440 SEA FILE=REGISTRY SUB=L79 CSS FUL L80 NOT L82
L92 SCR 1199 OR 2107 OR 1312 OR 1151
L94 2112 SEA FILE=REGISTRY SUB=L84 SSS FUL L92
L95 328 SEA FILE=REGISTRY ABB=ON PLU=ON L84 NOT L94
L96 221 SEA FILE=REGISTRY ABB=ON PLU=ON L95 NOT C3H6O
L97 184 SEA FILE=REGISTRY ABB=ON PLU=ON L96 NOT (CL OR BR OR F OR
I)/ELS
L98 35 SEA FILE=REGISTRY ABB=ON PLU=ON L97 AND 2/NC
L99 19 SEA FILE=REGISTRY ABB=ON PLU=ON L98 AND OC2/ES
L100 12 SEA FILE=REGISTRY ABB=ON PLU=ON L99 AND (C8H8 OR C8H8O OR
C15H24O OR C9H10O OR C9H10)
L102 173 SEA FILE=REGISTRY ABB=ON PLU=ON (L62 OR L64 OR L67 OR L73 OR
L77 OR L100)

=> d sta que l130
L119 STR



VAR G1=OH/9
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC 1
NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE
L123 SCR 2016 OR 2021 OR 2026 OR 1918 OR 2039 OR 2050 OR 2049 O

```
R 2048 OR 2053 OR 2052 OR 2051 OR 2054 OR 1839
L125        408 SEA FILE=REGISTRY CSS FUL L119 NOT L123
L126        299 SEA FILE=REGISTRY ABB=ON  PLU=ON  L125 AND NC>=2
L127          5 SEA FILE=REGISTRY ABB=ON  PLU=ON  L126 NOT ((MXS OR IDS OR MNS
                OR PMS)/CI OR COMPD OR WITH OR UNSPECIFIED OR CONJUGATE OR
                LABELED)
L128          4 SEA FILE=REGISTRY ABB=ON  PLU=ON  L127 NOT C6H10O4
L129        109 SEA FILE=REGISTRY ABB=ON  PLU=ON  L125 NOT L126
L130        113 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L128 OR L129)


=> d his

     (FILE 'CASREACT' ENTERED AT 07:33:13 ON 28 JUL 2004)
                DEL HIS

     FILE 'HCAPLUS' ENTERED AT 07:33:57 ON 28 JUL 2004
L1            1 S US20040138509/PN OR US2002-412074#/AP,PRN
                E BHATTACHARYA/AU
L2          793 S E4-E14,E68
                E PARMAR G/AU
L3            3 S E3-E5
                E PUROHIT V/AU
L4           16 S E3,E4,E8
                E PATEL N/AU
L5          166 S E3,E6,E187,E188
L6            1 S L2-L5 AND ?OXYETHYLENE?(L)?ETHER?
L7            1 S L1,L6
L8         1059 S 1 NITROPROPANE
L9         8285 S PROPIONALDEHYDE
L10        2492 S NITROALKANE OR NITRO ALKANE
                E ALKANE/CT
L11         768 S E93
L12         327 S E111(L)NITRO
L13        1145 S E19+NT(L)NITRO
L14         181 S E20,E22-E27,E29,E30,E32,E33,E35-E41,E43-E47,E50-E52,E54,E56-E
                E ALKANE/CW
L15        1110 S E4 (L) NITRO
                E ALDEHYDES/CT
L16       21937 S E4-E9,E12,E13,E15,E16,E34,E44,E49,E51-E53
L17      399482 S E3+NT

     FILE 'REGISTRY' ENTERED AT 07:47:51 ON 28 JUL 2004
L18           2 S 108-03-2 OR 123-38-6
L19         173 S (108-03-2 OR 123-38-6)/CRN
L20           4 S L19 NOT ((PMS OR IDS OR MXS OR MNS)/CI OR COMPD OR WITH OR UN
L21           2 S L20 AND H2O

     FILE 'HCAPLUS' ENTERED AT 07:51:40 ON 28 JUL 2004
L22       12801 S L18 OR L21
L23        9681 S 1()(PROPANAL OR PROPANONE) OR ETHYLCARBOXALDEHYDE OR METHYLAC
L24      409648 S L22,L23,L8-L17
L25         238 S ORGANIC REACTANT
                E REACTANT/CT
L26      409865 S L24,L25
L27         634 S (K OR POTASSIUM)()THIOACETATE
L28       97448 S (NA OR SODIUM OR K OR POTASSIUM OR LI OR LITHIUM OR CE OR CES
L29      487674 S (NA OR SODIUM OR K OR POTASSIUM OR LI OR LITHIUM OR CS OR CES
L30          78 S TETRABUTYL AMMONIUM HYDROXIDE

     FILE 'REGISTRY' ENTERED AT 07:57:12 ON 28 JUL 2004
L31           1 S 10387-40-3
L32           5 S 1310-73-2 OR 21351-79-1 OR 1310-58-3 OR 1310-65-2 OR 2052-49-
```

```
     FILE 'HCAPLUS' ENTERED AT 07:59:09 ON 28 JUL 2004
L33          633 S L31
L34        96537 S L32
L35        13279 S ALKALI METAL THIOACETATE OR ALKALI METAL HYDROXIDE OR ALKALIN
                 E ALKALI METAL/CT
                 E ALKALI METAL THIO/CT
                 E ALKALI METAL/CT
                 E E5+ALL
                 E ALKALI METAL HYDROXIDE/CT
                 E E4+ALL
L36       104483 S E10,E9+NT
                 E ALKALINE EARTH METAL HYDROXIDE/CT
                 E ALKALINE EARTH HYDROXIDE/CT
                 E E4+ALL
L37        54461 S E9+NT
                 E E8+ALL
L38            0 S INORGANIC METAL REAGENT
L39           11 S INORGANIC METAL(L) REAGENT
L40       551980 S L27-L30,L33-L39
L41        24744 S L26 AND L40
L42           71 S L41 AND ?OXYETHYLENE?(L)?ETHER?
L43           34 S L41 AND POLYOXYALKYLENE#/CW (L)?ETHER?

     FILE 'REGISTRY' ENTERED AT 08:06:32 ON 28 JUL 2004
L44              STR
L45           50 S L44 CSS SAM
L46        50315 S L44 CSS FUL
                 SAV TEMP L46 KUMAR666/A
L47         8148 S L46 AND C2H4O
L48         7186 S L47 NOT OC2/ES
L49              STR L44
L50           50 S L49 CSS SAM SUB=L46
L51         7872 S L49 CSS FUL SUB=L46
                 SAV L51 TEMP KUMAR666A/A
L52         1259 S L47 AND L51
L53              SCR 1700
L54           50 S L53 CSS SAM SUB=L51
L55              STR L49
L56           13 S L55 CSS SAM SUB=L51
L57          562 S L55 CSS FUL SUB=L51
                 SAV L57 TEMP KUMAR666B/A
L58          295 S L57 AND 1/NC
L59           55 S L58 AND IDS/CI
L60          240 S L58 NOT L59
L61           67 S L60 AND PMS/CI
L62           65 S L61 NOT (CYCLOHEXYL OR C6-C6/ES)
L63          173 S L60 NOT L61
L64           40 S L63 AND O>=10
L65          133 S L63 NOT L64
L66           56 S L65 AND O>=5
L67           54 S L66 NOT (CYCLOHEXYL OR D/ELS)
L68          267 S L57 NOT L58-L67
L69          124 S L68 NOT (N OR P OR SI OR S)/ELS
L70          106 S L69 NOT CYCLODEXTRIN
L71           92 S L70 NOT UNSPECIFIED
L72            6 S L71 AND (NA OR K)/ELS AND 2/NC
L73            2 S L72 NOT (IDS/CI OR C11H16O2 OR C9H12O2 OR C10H14O2)
L74          310 S L52 AND L57
L75           86 S L74 AND 1/NC
L76           61 S L75 NOT IDS/CI
L77           57 S L76 NOT (D/ELS OR CYCLOHEXYL OR C6-C6/ES)
L78          224 S L74 NOT L75
```

```
L79       40517 S C2H4O AND 46.150.18/RID AND PMS/CI
L80             STR L49
L81            50 S L80 CSS SAM SUB=L79
L82               SCR 1992 OR 2016 OR 2021 OR 2026 OR 1918 OR 2039 OR 2050 OR 204
L83            50 S L80 NOT L82 CSS SAM SUB=L79
L84          2440 S L80 NOT L82 CSS FUL SUB=L79
                  SAV TEMP L84 KUMAR666C/A
L85           335 S L84 AND 1/NC
L86           277 S L85 NOT L57
L87           189 S L86 NOT OXO
L88           164 S L87 NOT BENZOYL
L89           151 S L88 NOT (CL OR F OR I OR BR)/ELS
L90          2105 S L84 NOT L85-L89
L91           267 S L90 AND 2/NC
L92               SCR 1199 OR 2107 OR 1312 OR 1151
L93            50 S L92 SAM SUB=L84
L94          2112 S L92 FUL SUB=L84
L95           328 S L84 NOT L94
L96           221 S L95 NOT C3H6O
L97           184 S L96 NOT (CL OR BR OR F OR I)/ELS
L98            35 S L97 AND 2/NC
L99            19 S L98 AND OC2/ES
L100           12 S L99 AND (C8H8 OR C8H8O OR C15H24O OR C9H10O OR C9H10)
L101           16 S L98 NOT L99
L102          173 S L62,L64,L67,L73,L77,L100

     FILE 'HCAPLUS' ENTERED AT 08:52:42 ON 28 JUL 2004
L103       14628 S L102
L104          39 S L103 AND L41
L105         130 S L42,L43,L104
L106         127 S L105 AND (PD<=20020919 OR PRD<=20020919 OR AD<=20020919)
L107           3 S L106 AND ALIPHA?/SC,SX
L108           1 S L107 AND REACTIONS/TI
L109          19 S L106 AND SOLVENT
L110         106 S L106 NOT L107-L109
                  SEL DN AN 43 59
L111           3 S E1-E6 OR L1
L112           3 S L105 NOT L106
                  SEL DN AN 3
L113           1 S L112 AND E7-E9
L114           4 S L111,L113 AND L1-L17,L22-L30,L33-L43,L103-L113
L115          44 S L2-L5 AND L8-L17,L22-L30,L33-L43,L103-L114
L116          42 S L115 NOT L114
L117           3 S L2-L5 AND ALIPH?/SC,SX NOT L114-L116
L118           9 S L2-L6 AND C07C/IPC

     FILE 'REGISTRY' ENTERED AT 09:09:11 ON 28 JUL 2004
L119              STR
L120           4 S L119 CSS SAM
L121              SCR 2016 OR 2021 OR 2026 OR 1918 OR 2039 OR 2050 OR 2049 OR 204
L122           1 S L119 NOT L121 CSS SAM
L123              SCR 2016 OR 2021 OR 2026 OR 1918 OR 2039 OR 2050 OR 2049 OR 204
L124          15 S L119 NOT L123 CSS SAM
L125         408 S L119 NOT L123 CSS FUL
                  SAV TEMP L125 KUMAR666D/A
L126         299 S L125 AND NC>=2
L127           5 S L126 NOT ((MXS OR IDS OR MNS OR PMS)/CI OR COMPD OR WITH OR U
L128           4 S L127 NOT C6H10O4
L129         109 S L125 NOT L126
L130         113 S L128,L129

     FILE 'HCAPLUS' ENTERED AT 09:12:42 ON 28 JUL 2004
L131       14193 S L130
```

```
L132          57 S L131 AND L103
L133           4 S L132 AND L40
L134          53 S L132 NOT L133
L135        4691 S L130 (L) RACT+NT/RL
L136          12 S L134 AND L135
L137         443 S L102 (L) (RACT+NT OR CAT)/RL
L138           4 S L132 AND L137
L139           1 S L135 AND L138
L140           2 S L114 AND L115-L118,L131-L139
L141           4 S L114,L140

     FILE 'REGISTRY' ENTERED AT 09:17:07 ON 28 JUL 2004

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 09:17:34 ON 28 JUL 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 28 Jul 2004  VOL 141 ISS 5
FILE LAST UPDATED: 27 Jul 2004  (20040727/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> d l141 all hitstr tot

L141 ANSWER 1 OF 4  HCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:569897  HCAPLUS
ED   Entered STN:  16 Jul 2004
TI   Method of producing organic compounds in presence of oxyethylene
     ether catalyst and in a solvent minimized environment
IN   Bhattacharya, Apurba; Parmar, Gaurang L.;
     Purohit, Vikram C.; Patel, Nitin C.
PA   The Texas A&M University System, USA
SO   U.S. Pat. Appl. Publ., 11 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  C07C043-02
NCL  568662000
CC   23 (Aliphatic Compounds)
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   US 2004138509      A1   20040715       US 2003-666543   20030919 <--
PRAI US 2002-412074P    P    20020919  <--
AB   A process of producing organic compounds, such as acetaminophen,
     nitroalcohols and indoles, employs a catalyst system of an
     oxyethylene ether and a metal containing inorganic or
     organic reagent.  The oxyethylene ether at least
```

partially complexes the metal of the inorganic or organic reagent. As such, the reactions may be conducted neat. The processes are environmentally friendly and operationally simple.

L141 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **2003:155428** HCAPLUS
DN **138:320887**
ED Entered STN: 02 Mar 2003
TI Environmentally friendly solvent-free processes: novel dual catalyst system in Henry reaction
AU **Bhattacharya, Apurba**; **Purohit, Vikram C.**; Rinaldi, Frank
CS Department of Chemistry, Texas A & M University at Kingsville, Kingsville, TX, 78363, USA
SO Organic Process Research & Development (2003), 7(3), 254-258
CODEN: OPRDFK; ISSN: 1083-6160
PB American Chemical Society
DT Journal
LA English
CC 23-7 (Aliphatic Compounds)
OS CASREACT 138:320887
AB A series of β-nitro alcs. R1CH(OH)CHR2NO2 [R1 = Me, Et, Pr, Me2CH, (E)-PhCH:CH, PhCH2CH2; R2 = Me, Et, Pr] were prepared in 70-93% yields by environmentally benign solvent-free Henry condensation of an appropriate aldehyde R1CHO with a 1-**nitroalkane** R2CH2NO2 utilizing a novel dual catalytic system consisting of a mineral base and an appropriate surfactant under homogeneous conditions.
ST alc beta nitro solvent free environmentally friendly synthesis; aldehyde surfactant catalyzed Henry condensation **nitroalkane**
IT Alkylation
(Henry; preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT Alcohols, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(aliphatic, nitro; preparation of β-nitro alkanols via **KOH** -surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT **Aldehydes, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**aliphatic**; preparation of β-nitro alkanols via **KOH** -surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT **Alkanes, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**nitro**; preparation of β- **nitro** alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT Green chemistry
(preparation of β-nitro alkanols via environmentally friendly **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT **9002-93-1**, Triton X-405
RL: **CAT (Catalyst use)**; USES (Uses)
(preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)
IT **75-07-0**, Acetaldehyde, reactions **78-84-2**, Isobutanal
79-24-3, Nitroethane **104-53-0**, Hydrocinnamaldehyde
108-03-2, **1-Nitropropane** **123-38-6**,
Propanal, reactions **123-72-8**, Butanal 627-05-4,
1-Nitrobutane **14371-10-9**, trans-Cinnamaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)

IT 5342-70-1P 5447-99-4P, 3-Nitro-2-pentanol 5462-04-4P 6270-16-2P, 3-Nitro-2-butanol 20570-70-1P 20575-40-0P, 2-Nitro-3-pentanol 87377-91-1P 132272-46-9P 511529-40-1P 537006-34-1P 537006-37-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD

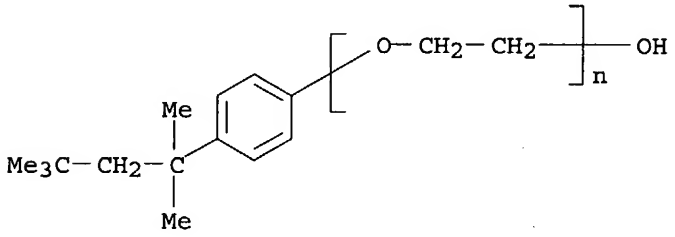
RE

(1) Amato, I; Science 1993, V259, P1538
(2) Anastas, P; Green Chemistry Theory and Practice P1
(3) Anon; http://www.epa.gov/ceppo/cameo/help/chaptera.htm#913100
(4) Arkhipovich, G; Polym Bull 1984, V12, P181 HCAPLUS
(5) Bailar, J; Catal Rev 1974, V10(1) HCAPLUS
(6) Barrett, A; Chem Rev 1986, V86, P751 HCAPLUS
(7) Bhattacharya, A; Angew Chem 1986, V98, P442 HCAPLUS
(8) Bonetti, G; J Org Chem 1968, V33, P237 HCAPLUS
(9) Bousquet, E; US 2335384 HCAPLUS
(10) Brian, P; Nature 1946, V158, P876 HCAPLUS
(11) Brown, A; Can J Res 1948, V26D, P177 HCAPLUS
(12) Browner, C; EPA Journal 1993, V3(19), P6
(13) Cablewski, T; J Org Chem 1994, V59, P3408 HCAPLUS
(14) Colvin, E; Helv Chim Acta 1981, V64, P2264 HCAPLUS
(15) Crenson, M; Dallas Morning News Ember 1993, Sept 13, P1D
(16) Crenson, M; Pollution Prevention Act, U S C 13101-13109 1990, P42
(17) Dehmlow, E; Phase Transfer Catalysis, Monographs in Modern Chemistry, 11 1983
(18) Dolling, U; A Novel Dual Catalysis Catalysis of Organic Reactions 1988, V33, P65 HCAPLUS
(19) Dolling, U; J Am Chem Soc 1984, V106, P446 HCAPLUS
(20) Dolling, U; Phase Transfer Catalysis; New Chemistry, Catalysts, and Applications; ACS Symposium Series 326; Chapter 7 1987, P67 HCAPLUS
(21) Ember, L; CHEMTECH 1993, June, P3
(22) Fernandez, R; Carbohydr Res 1993, V247, P239 HCAPLUS
(23) Gavaskar, A; Onsite Solvent Recovery U S EPA/600/R-94/026 1993
(24) Hall, N; Science 1994, V266, P32
(25) Hanson, D; J Catal 1974, V32, P204 HCAPLUS
(26) Henry, L; Compt Rend 1895, V120, P1265
(27) Hoover, F; J Org Chem 1947, V12, P506 HCAPLUS
(28) Ilman, D; Chem Eng News 1993, Sept 6, P26
(29) Kambe, S; Bull Chem Soc Jpn 1968, V41(6), P1444 HCAPLUS
(30) Kamlet, J; US 2151517 1939 HCAPLUS
(31) Kisinga, P; J Org Chem 1999, V64, P4298
(32) Lunts, L; Medicinal Chemistry, The Role of Organic Chemistry in Drug Research 1985, P49
(33) Luzzio, F; Tetrahedron 2001, V57, P915 HCAPLUS
(34) March, J; Advanced Organic Chemistry, 4th ed 1990, P82
(35) McGowan, J; Ann Appl Biol 1948, V35, P25 HCAPLUS
(36) Newman, A; Environ Sci Technol 1994, V28(11), P463A
(37) Pittman, C; Chem Technol 1973, V3, P566
(38) Process Chemistry Collaboration; Chem Eng News 2001, V79(July 23), P41
(39) Process Chemistry Collaboration; Environmentally Friendly Solvent-Free Processes:Preparation of Nitro Alcohols, A Class of Valuable Drug Intermediates by Henry Reaction, American Chemical Society 57th Southwest Regional Meeting 2001, P17
(40) Raner, K; J Org Chem 1995, V60, P2456 HCAPLUS
(41) Rebeck, J; Angew Chem, Int Ed Engl 1990, V29, P245
(42) Sasai, H; Tetrahedron Lett 1994, V35(33), P6123 HCAPLUS
(43) Schchter, H; J Am Chem Soc 1967, V89, P3005
(44) Seebach, D; Helv Chim Acta 1982, V65, P1101 HCAPLUS

(45) Sheldon, R; CHEMTECH 1994, March, P38
(46) Sittig, M; Pharmaceutical Manufacturing Encyclopedia, 2nd ed V1and2
(47) Soladie-Cavalo, A; Tetrahedron Lett 1988, P2189
(48) Solladie-Cavalo, A; Tetrahedron Lett 1988, P2189
(49) Strauss, C; Aust J Chem 1995, V48, P1665 HCAPLUS
(50) Susai, H; Tetrahedron Lett 1994, V50(43), P12313
(51) Varma, R; Tetrahedron Lett 1997, V38(29), P5131 HCAPLUS
(52) Wollenberg, R; Tetrahedron Lett 1978, P3219 HCAPLUS

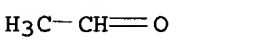
IT **9002-93-1**, Triton X-405
RL: **CAT (Catalyst use)**; USES (Uses)
(preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)

RN 9002-93-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy- (9CI) (CA INDEX NAME)

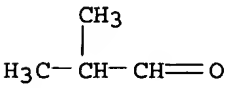


IT **75-07-0**, Acetaldehyde, reactions **78-84-2**, Isobutanal **104-53-0**, Hydrocinnamaldehyde **108-03-2**, 1-**Nitropropane** **123-38-6**, **Propanal**, reactions **123-72-8**, Butanal **14371-10-9**, trans-Cinnamaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of β-nitro alkanols via **KOH**-surfactant system catalyzed solvent-free Henry reaction of aldehydes with **nitroalkanes**)

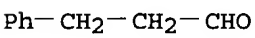
RN 75-07-0 HCAPLUS
CN Acetaldehyde (8CI, 9CI) (CA INDEX NAME)



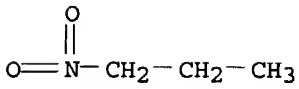
RN 78-84-2 HCAPLUS
CN Propanal, 2-methyl- (9CI) (CA INDEX NAME)



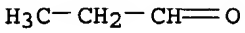
RN 104-53-0 HCAPLUS
CN Benzenepropanal (9CI) (CA INDEX NAME)



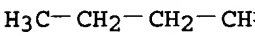
RN 108-03-2 HCAPLUS
CN Propane, 1-nitro- (8CI, 9CI) (CA INDEX NAME)



RN 123-38-6 HCAPLUS
CN Propanal (9CI) (CA INDEX NAME)

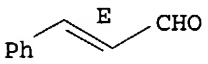


RN 123-72-8 HCAPLUS
CN Butanal (9CI) (CA INDEX NAME)



RN 14371-10-9 HCAPLUS
CN 2-Propenal, 3-phenyl-, (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L141 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1995:905387** HCAPLUS
DN **123:288398**
ED Entered STN: 09 Nov 1995
TI A complexing process of residual basic catalyst in hydroxyl-terminated polyethers
IN Rouwenhorst, Inge M.; Platteeuw, Pieter J.; Hiensch, Christiaan J.
PA Dow Chemical Co., USA
SO PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08K005-54
ICS C08L071-02; C08G065-30
CC 37-6 (Plastics Manufacture and Processing)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9515997	A1	19950615	WO 1994-US13312	19941115 <--
	W: AU, BR, CA, CN, JP, KR, NO				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9514082	A1	19950627	AU 1995-14082	19941115 <--
PRAI	US 1993-163411		19931206 <--		
	WO 1994-US13312		19941115 <--		

AB A process for finishing hydroxyl-terminated **polyethers** containing a Group Ia or IIa metal ion comprises treating the **polyether** with an organic sulfonic acid ester under mild conditions to minimize formation of unwanted byproducts and offer the environmental and economic advantage of not having to remove and dispose of catalyst or byproducts. Finished polyesters are well suited to the end applications including their use in the preparation of polyurethane polymers. Crude glycerin-initiated **polyoxyethylene** polyoxypropylene triol (containing 100 ppm **KOH**) was treated with toluene sulfonic acid Me ester to give a **polyether** A having <1 ppm **propionaldehyde** and

essentially neutral pH. The **polyether** A having deactivated catalyst is used to prepare polyurethane foam.

ST polyoxyalkylene hydroxyl terminated catalyst deactivation; toluene sulfonic acid ester treating polyoxyalkylene; potassium catalyst deactivated polyoxyalkylene

IT Urethane polymers, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(cellular; polyurethane manufacture using hydroxyl-terminated polyethers treated with sulfonic acid ester to deactivate catalyst)

IT **Polyoxyalkylenes**, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(polyurethane manufacture using hydroxyl-terminated **polyethers** treated with sulfonic acid ester to deactivate catalyst)

IT 28804-47-9, Toluene sulfonic acid methyl ester
RL: NUU (Other use, unclassified); USES (Uses)
(a complexing process of residual basic catalyst in hydroxyl-terminated polyethers)

IT 9082-00-2, Polyethylene polypropylene glycol glycerol ether
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(a complexing process of residual basic catalyst in hydroxyl-terminated polyethers)

IT 57516-88-8P, Polyethylene polypropylene glycol glycerol ether-TDI copolymer
RL: IMF (Industrial manufacture); PREP (Preparation)
(polyurethane manufacture using hydroxyl-terminated polyethers treated with sulfonic acid ester)

L141 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN **1989:515816** HCAPLUS
DN **111:115816**
ED Entered STN: 01 Oct 1989
TI The catalytic effects of polyethylene glycols and their ethers on the Reimer-Tiemann reaction
AU Nomura, Eisaku; Taniguchi, Hisaji
CS Ind. Technol. Cent. Wakayama Prefect., Wakayama, 649-62, Japan
SO Nippon Kagaku Kaishi (**1989**), (6), 977-82
CODEN: NKAKB8; ISSN: 0369-4577
DT Journal
LA Japanese
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 22
OS CASREACT 111:115816
AB In order to evaluate the catalytic effects of polyethylene glycols (PEG's) in the Reimer-Tiemann reaction, the reaction catalyzed by PEG's was compared that in the presence of their di-Et ethers (PEGDEE's) or monomethyl ethers (PEGMME's). The para selectivity increased with increasing the average mol. weight of PEG's and their ethers except for PEGDEE's.
The total yield of o- and p-hydroxybenzaldehyde based on a phenol decreased markedly by use of PEGDEE's. The para selectivity was affected by not only the concentration of aqueous alkali but also the molar ratio of alkali to
the terminal hydroxyl groups of PEG's or PEGMME's. The yield of p-isomer increased with increasing the concentration of aqueous **KOH**, while, that of o-isomer had the maximum value at the **KOH** concentration of .apprx.20%. Intermediates such an phenoxides and carbenes were identified and characterized.

ST polyethylene glycol catalyst Reimer Tiemann; phenol Reimer Teimann reaction catalyst; **polyoxyethylene** ethyl **ether** catalyst; methyl **ether polyoxyethylene** catalyst

IT Formylation
(Reimer-Tiemann, of phenol, effects of polyethylene glycols and their ethers on, intermediates formation in relation to)

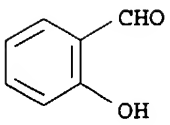
IT Formylation catalysts
(Reimer-Tiemann, polyethylene glycols and their ethers, for phenol, activity of, intermediates formation in relation to)
IT **1310-58-3**, **Potassium hydroxide**, uses and miscellaneous **1310-73-2**, **Sodium hydroxide**, uses and miscellaneous
RL: USES (Uses)
(Reimer-Tiemann reaction of phenol in presence of, catalytic effects of polyethylene glycols and their ethers in)
IT 108-95-2, Phenol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Reimer-Tiemann reaction of, catalytic effects of polyethylene glycols and their ethers on)
IT 9004-74-4, Polyethylene glycol monomethyl ether 25322-68-3, Polyethylene glycol 53609-62-4, Polyethylene glycol diethyl ether
RL: PRP (Properties)
(catalytic effect of, in Reimer-Tiemann reaction of phenol in presence of sodium and **potassium hydroxides**, intermediates formation in relation to)
IT 122551-34-2P 122551-35-3P 122551-36-4P 122551-37-5P 122551-38-6P 122551-39-7P 122551-40-0P 122551-41-1P
RL: PREP (Preparation)
(intermediates, formation and characterization of, in Reimer-Tiemann reaction of phenol in presence of polyethylene glycols and their ethers)
IT **90-02-8P**, o-Hydroxybenzaldehyde, preparation **123-08-0P**, p-Hydroxybenzaldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, from Reimer-Tiemann reaction of phenol, catalytic effects of polyethylene glycols and their ethers in)
IT **1310-58-3**, **Potassium hydroxide**, uses and miscellaneous **1310-73-2**, **Sodium hydroxide**, uses and miscellaneous
RL: USES (Uses)
(Reimer-Tiemann reaction of phenol in presence of, catalytic effects of polyethylene glycols and their ethers in)
RN 1310-58-3 HCAPLUS
CN Potassium hydroxide (K(OH)) (9CI) (CA INDEX NAME)

K—OH

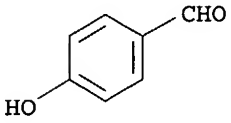
RN 1310-73-2 HCAPLUS
CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)

Na—OH

IT **90-02-8P**, o-Hydroxybenzaldehyde, preparation **123-08-0P**, p-Hydroxybenzaldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, from Reimer-Tiemann reaction of phenol, catalytic effects of polyethylene glycols and their ethers in)
RN 90-02-8 HCAPLUS
CN Benzaldehyde, 2-hydroxy- (9CI) (CA INDEX NAME)



RN 123-08-0 HCAPLUS
CN Benzaldehyde, 4-hydroxy- (9CI) (CA INDEX NAME)



=>